B2361
07

UNIVERSITY OF NEVADA BULLETIN

VOL. IV JANUARY 1, 1910 No. 1

UNIVERSITY OF NEVADA STUDIES

EDITED BY THE
COMMITTEE ON PUBLICATIONS

VOLUME II, NUMBER 2
1910

PUBLISHED QUARTERLY BY THE UNIVERSITY OF NEVADA

Monograph

NOTE.—The University of Nevada publications are offered in exchange for certain periodicals and for the publications of learned societies and institutions, universities, and libraries. For sample copies address the University Library, Reno, Nevada.

Entered in the Post-Office at Reno, Nevada, as second-class matter, under Act of Congress, July 16, 1894

UNIVERSITY OF NEVADA STUDIES

EDITED BY THE
COMMITTEE ON PUBLICATIONS

VOLUME II, NUMBER 2
1910

PUBLISHED BY THE UNIVERSITY OF NEVADA

LB2361
.07

The articles that appear in the University of Nevada Studies are contributed principally by the instructors in the University of Nevada, but contributions from other sources are not excluded.

JAMES EDWARD CHURCH, JR.,
CARL ALFRED JACOBSEN,
HERBERT WYNFORD HILL,
Committee on Publications.

DEC

NEVADA PRESS
RENO

CONTENTS

The College Curricula: A study of Required and Elective Courses in American Colleges and Universities

By George Ordahl

COLLEGE CURRICULA IN 1904-5

PART I.

The first part of this article was written under the direction of the Department of Education, University of Oregon, in 1905, and accepted as a Masters thesis by that institution in 1906. Part two is a comparative study of the data and results then obtained with similar data collected during the first part of the present academic year.

For several years the college curricula have been of supreme interest not only to educators but to the intelligent public. Since the summer of 1886 the words "prescribed" and "elective" have become familiar terms in the educational periodicals. It was in May of this year that the struggle going on between the conservatives and radicals of the Harvard faculty culminated in a victory for the latter.

This turn in favor of an elective system caused considerable alarm among the remaining colleges and universities of the United States. In New England the dismay is best understood when we read the paper addressed to the overseers of Harvard and signed by the presidents of leading institutions. The paper is a plea directed against the change in entrance conditions, and promotion to the Bachelors Degree. It was held that the proposed modifications would seriously affect the bearer of a degree, and further, would everywhere endanger the standing of American colleges. Outside of this immediate section of country, it was thought that the old label, A. B., applied to the degree of "comprehensive significance" would be an academic misrepresentation, because it would "no longer be evidence that its bearer

has been instructed in both Latin and Greek." (Bush, G. G. Hist. of Higher Educ. in Mass., p. 168).

Notwithstanding the opposition, the elective system has gained ground, and some of the institutions most earnest in the opposing plea, today, have an undergraduate course largely elective. Yet the struggle is by no means ended. The opposing sides of the controversy are maintained by zealous and able educators unflagging in behalf of their cause. On the other hand no unbiased effort seems to have been made to estimate the general trend of feeling or to give the state of public opinion on the matter.

The purpose of this paper has been to determine the present status of public opinion with regard to "required" and "elective work" in the undergraduate course, as far as it can be shown from a study of the curricula in representative institutions. Not all of the 476 colleges and universities have been treated in this study; but while the number included is but little more than one-sixth of the whole, it is believed that their significance is much more than that fraction would indicate; the State Universities are complete, and such other groups have been taken as would serve for a basis of comparison. These latter groups are representative of the remaining colleges and universities with the exceptions of the western and southern colleges; but from a cursory study it is believed they would not materially affect the conclusions drawn—if at all there would be a slight gain for the conservatives.

On basis of geographical importance and relation to community the 78 universities and colleges have been divided into groups as follows:

Southern State Universities

Alabama	Louisiana	Tennessee
Arkansas	Mississippi	Texas
Delaware	North Carolina	Virginia
Florida	South Carolina	West Virginia
Georgia		

Small Western State Universities

Arizona	New Mexico	Oregon
Colorado	North Dakota	South Dakota
Idaho	Oklahoma	Utah
Montana	Wyoming	Washington
Nevada		

Large Western State Universities

California	Kansas	Nebraska
Indiana	Michigan	Ohio
Iowa	Minnesota	Wisconsin
Illinois	Missouri	

Women's Colleges

Mills	Barnard	Wells
Mt. Holyoke	Rockford	Wellesley
Randolph Macon	Radcliff	Bryn Mawr
Smith	Vassar	Elmira
Baltimore		

New England Colleges

Amherst	Bowdoin	Dartmouth
Norwich	Bates	Brown
French	St. Anselm	Boston
Colby	Holy Cross	Tufts
Boston (Catholic)	Clark	Middleburry
Trinity	Weslyan	Williams

Large Private Endowed Universities

Chicago	Harvard	Princeton
Cornell	Leland Stanford	Yale
Columbia	Northwestern	Johns Hopkins
University of Pennsylvania		

The difficulty of obtaining satisfactory data from sources so different in general makeup and so varied in method of detail as college and university catalogues is not slight. Others who have attempted to collate data from these sources criticise them both as to matter and to form. The American genius is painfully evident in the individuality of these catalogues; beneath the heterogeneity there are certain facts common to all, each has entrance conditions and requirements for degrees, but there is no common way of stating or indexing, and frequently the work listed under the head "required," is not all the work required, but certain conditions will be found elsewhere that in some way modify the list; further, there is no common unit by which the student's work is estimated. Owing to this difference in terms and systems it is hardly possible for the following tabulations to be absolutely correct, however every precaution has been exercised in avoiding error.

The work in the liberal arts course, with which this paper deals, has been classed as "required" and "elective." The elective work has been subdivided according to the terms, "major," "minor," "free elective" and "elective requirements." Required work as tabulated represents the least amount prescribed for any student in any of the liberal arts courses; for example, if in any institution the classical course should prescribe four years Latin, a literary course three years, and a scientific course prescribe but two years, the latter amount would be tabulated as representing the amount of Latin that is essential to a Baccalaureate degree.

The "major" represents a subject that must be chosen at will by the student and pursued for a certain period of time, representing from one to three years. The "minor" is of the same nature as the major, usually a subject bearing some relation to the "major" the less in

amount. "Free electives" represent that work which the student may choose without restriction. "Elective requirements"—this term has been coined to cover that work open to electives with certain limitations; Virginia is an example, having eight groups, of about four subjects more or less related, from each of which the student must choose one.

In some institutions attendance on one lecture per week for one semester is counted a credit; in others the term system prevails; in every case all systems have been reduced to the common measure—one hour per week for one college year, a credit.

The work of this study naturally divides itself into three main sections, that of the required work, the elective work, and the characteristics of the groups of institutions.

REQUIRED COURSES

In taking up the required work we will treat each subject in its relation to the whole 78 institutions, as well as to each separate group.

Eighteen of the 78 institutions studied prescribe Latin ranging in amount from one to three years—however the majority prescribe about three credits in this subject. The western state institutions, 24 in number, do not have a single Latin or Greek requirement, but the New England colleges have a representation of 9 out of 18. Eight institutions prescribe Greek, five of which belong to the New England group, two to the large private institutions, and one to the southern group; five require either Latin or Greek. Ten institutions require French, 11 German, 21 either French or German, 14 allow a choice of any language, ancient or modern; seven of the 14 are found in the western state universities. Thus out of the 78, 19 require Latin, 10 French or German, 14 allow choice

of any language, while eight consider Greek essential to a liberal education. The language requirement for each group of institutions, in terms of year-hours with the equivalent in terms of percentage of whole requirement, is as follows:

Average credit for Southern State Universities, 6, per cent of required work, 22.

Average credit for New England Colleges, 11, per cent of required work, 30.

Average credit for Women's Colleges, 6, per cent of required work, 23.

Average credit for small Western State Universities, 5, per cent of required work, 28.

Average credit for large Western State Universities, 3.2, per cent of required work, 29.

Average credit for large private endowed universities, 5.2, per cent of required work, 36.

Mathematics receives its heaviest representation in the southern state universities, followed closely by the New England colleges. Least emphasis is manifest in the large western universities. While the small western state universities have but one-tenth heavier requirements than that of the large private endowed universities. The following table shows the rank of each group, in prescribed mathematics, also the per cent of required work:

Average credits for Southern State Universities, 5.3, or 22 per cent of the whole required work.

Average credits for New England Colleges, 4.5, or 13 per cent of the whole required work.

Average credits for Women's Colleges, 3.0, or 12 per cent of the whole required work.

Average credits for small Western State Universities, 2.0, or 11 per cent of the whole required work.

Average credits for large private endowed universities, 1.9, or 13 per cent of the whole required work.

The requirements in mathematics begins in nearly every case with what is termed advanced, or College Algebra. One and a half credits, followed by an equal amount of time devoted to Geometry and Trigonometry. The following table shows the number of institutions that require a particular branch of mathematics:

39	prescribe	Algebra
39	"	Geometry
37	"	Trigonometry
14	"	Analytical Geometry
4	"	Calculus

Of those requiring the first three, Algebra, Trigonometry and Geometry, 15 are found in the New England colleges, three in the large private endowed universities, two in the large western universities, and one in the small western universities, five in the women's colleges, ten in the southern state universities. The social sciences are considerably scattered both as to subject and institution. They include History, Sociology, and Economics, and are represented as follows:

GROUPS OF INSTITUTIONS	Number of Institutions That Require Social Science	The Per Cent of the Required Work
Large private endowed universities	3	9
New England Colleges	9	7
Southern State Universities	5	6
Women's Colleges	8	8.5
Large Western State Universities	1	2.9
Small Western State Universities	5	5.2

Sixteen of these institutions require economics, ranging in amount from one and a half to three credits. History is variously distributed over the whole field, usually choice being allowed the student between ancient and modern. Twenty-eight require history in an amount ranging in quantity from one to six credits, with an average of 3.2 credits for each of the 28.

The philosophical sciences are not widely emphasized, but are better formulated and more uniform within groups than is history. The subjects required are psychology, ethics and logic. In nearly every case where ethics is prescribed, psychology is considered a prerequisite; in a few instances logic is required without either psychology or ethics; but usually psychology is considered as introductory to the philosophical sciences. Outside of the Catholic institutions in the New England group philosophy is not prescribed. One college, Bryn Mawr, prescribes history of philosophy. The relative importance as per group is as follows:

COLLEGE	Average Credits Per College	Per Cent of Required Work
Large private endowed universities	1.2	8.2
New England Colleges	6	12
Southern State Universities	3-4	3
Women's Colleges	3	12
Large Western State Universities	1-5	2.1
Small Western State Universities	2-3	4.0

English language receives a more uniform recognition than any other subject in the "liberal arts" course. Seventy-two out of 78 prescribe it in an amount varying from three to 12 credits. The difference in emphasis according to groups may be seen from the table:

In the large private endowed universities there is an average of 2.8 credits, or 20 per cent of the required work.

In the New England Colleges there is an average of 5 credits, or 14 per cent of the required work.

In the Southern State Universities there is an average of 7 credits, or 23 per cent of the required work.

In the Women's Colleges there is an average of 4 credits, or 19 per cent of the required work.

In the large Western State Universities there is an average of 3 credits, or 21 per cent of the required work.

In the small Western State Universities there is an average of 5.5 credits, or 32 per cent of the required work.

Of the 72 institutions that require English, 35 prescribe Rhetoric, 29 composition and 28 literature.

To determine the relative amount of emphasis placed on theory of rhetoric, and composition, is in most cases not possible, as the description of courses in catalogues does not discriminate closely between the two but includes one in the other. However, from careful reading one would conclude that little emphasis is placed on the theory, for theme writing and composition are quite generally included with rhetoric. The manifest aim is to develop power of expression. A few institutions take up various periods of literature, but the general requirement under this head is the history of English literature beginning with its earliest development and continuing down to the present time.

One division of the required work remains to be considered, the miscellaneous subjects. Under this head have been included Astronomy, Elocution and Hygiene. The only reason for this division is that these three subjects occurred so rarely and with such faint emphasis that they might have been left out all together without affecting general conclusions. Elocution receives the heaviest number of credits, but amounts to less than one-fourth on an average for the 78 institutions. When five of these are distributed among the New England colleges, 4 1-2 to the women's, 3 1-2 to the Southern State universities, and 2 to Montana, we have 68 institutions remaining without the subject on their list of essentials. Astronomy receives 6 1-2 credits among the New England colleges and Southern universities, 5 credits in Hygiene in the same group.

ELECTIVE COURSES

Next turning our attention to the elective work we find the major subject emphasized in 20 institutions with an average of three credits each for the 78, or an average of 11 1-2 credits for the 20 that require the choice of a major. The following table shows the distribution of major and minor among the groups of institutions:

In the Small Western State Universities,

5 institutions require the major, 2 require a minor

In the Large Western State Universities,

4 institutions require the major, 2 require a minor

In the Large Private Endowed Universities,

3 institutions require the major, 3 require a minor

In the Women's Colleges,

3 institutions require the major, 3 require a minor

In the New England Colleges,

3 institutions require the major, 2 require a minor

In the Southern State Universities,

2 institutions require the major, 1 requires a minor.

On the whole there seems to be no way for accounting for the major, but as we find fewer institutions in the conservative groups that support it and a relatively greater number among the more liberal institutions favor it, we may conclude that the major is an indirect effort to lead the undergraduate student to give shape to his college course. Since the minor is more heavily represented in the large Western State Universities, having an average of four credits for each institution as against an average of one credit for the remaining institutions, we may place it in the same consideration with the major.

Taking the "free electives" by groups we see the New England colleges to be the most conservative, allowing an average of ten credits open to the free choice of the student; the Southern State Universities follow with an average of 17. The Women's Colleges are quite uni-

form in freedom of electives, leaving about one-third of the curriculum free to the choice of the student. The large private endowed universities have no requirements beyond the sophomore year, leaving the latter half of the undergraduate course open to free election. The average free electives in the small Western State Universities amounts to 34 credits for each institution, while the large Western State Universities are somewhat more liberal, allowing the student free choice of 37 credits.

Closely related to the "free electives" we have what has been defined in this paper as "elective requirements." They are found throughout the whole study. In some institutions they have no special designation, in others they are termed variously as "group requirements" or "limited electives." "Group requirements" does not distinguish between "electives" and "group courses," nor does "limited electives" meet the occasion, signifying number of credits rather than subjects to which the election is to be restricted. The "elective requirements" will be found to be more characteristic of the large Western Universities than of the remaining institutions. It is true that the number of credits is not so great on the average for each institution of this group as it is in the New England Colleges and Southern State Universities; but the system is more uniform within the group, and includes subjects bearing a connected and logical relation to each other, while the required electives of the New England Colleges and the Southern State Universities is more of the nature of an option in prescribed work. What has been said of the large Western State Universities applies to the small Western State Universities though not in so marked a degree.

Closely following and relative to the above mentioned electives is the tendency to allow the undergraduate student to elect a certain amount of work from colleges out-

side the liberal arts course and apply the same toward earning an A. B. degree. The New England group has one college that allows the election of one year's work from civil engineering or medicine. In the Southern Colleges we find three institutions that allow one year to be elected from professional colleges. In the large private endowed group of universities there are seven institutions that allow the undergraduate student to choose one year from a professional college. Of the three that do not admit this choice Johns Hopkins allows but three years to the undergraduate course, and in Harvard it is possible for a bright student to complete the college course in three years, but Princeton holds out strongly for a full four years in the undergraduate course.

Five out of the 13 small Western State Universities allow some work to be done in either law or medicine. The large Western State Universities each allow one year to be devoted to a professional course, with the single exception, however, of Ohio, which has no law school in connection with the university.

Twenty-three of the whole number of institutions studied support "group courses." The most common among which are the classical course, the literary course, and the scientific course; with subdivisions of the latter; others are the commercial group, Pre-medical, civic historic, and the philosophical-educational group.

In the Southern State Universities,

7 of the 13 institutions support group courses

In the Small Western Universities,

6 of the 13 institutions support group courses

In the Large Western State Universities,

4 of the 11 institutions support group courses

In the Large Private Endowed Universities,

1 of the 10 institutions support group courses

In the New England Colleges,

5 of the 18 institutions support group courses

In the Women's Colleges,

None of the 13 institutions support group courses.

The Southern and Small Western groups of state universities have the common characteristic of adhering to the old classical course. These are usually followed by a Latin-scientific course. Some have a literary group; this latter seems to be characteristic of the Small Western State Universities. Of the Large Private Endowed Universities this feature is characteristic of Johns Hopkins, only; and here the courses seem to be laid out for the specialist, the primary object of each group being to offer consistent graduate work on one line. The courses are—Mathematical Physical, Chemical Biological, Historical Political, Latin Mathematical, Classical, Modern Language.

In passing to the Large Western State Universities, we find in the three representative ones a tendency to emphasize the useful. In the University of California, we find the "College of Letters," "Social Science," "Natural Science." The Social Science Group is calculated to make the student an efficient citizen. Even more conspicuous is this tendency in Wisconsin, where we find an A. B. course in Pharmacy, and in Commerce. Illinois presents the same utilitarian phaze in two courses, one in "Banking," another in "General Business," while Iowa endeavors to meet every and any possible need of the most general or special student.

With regard to liberalism versus conservatism there remains but one phase to be considered, that of granting degrees. Thirty-four institutions grant an A. B. degree only, for the undergraduate work; 44 grant both an A. B. and a B. S. degree, while a limited few of the latter grant the degree, B. L. or B. Ph. The question quite naturally presents itself, "does the granting of an A. B. for all

undergraduate work mean that there is an endeavor to make the college course uniform or is it a tendency to class students pursuing widely different lines of work during the collegiate course on an equal basis?'' We find that the liberal institutions have a majority that grant but one degree, and the conservative groups of institutions have a slightly larger majority that grant both the A. B. and the B. S. degree, with a few that still grant the old degrees, B. L. or B. Ph. Since we have found no tendency on the part of the liberal institutions to restrict the undergraduate course to certain subjects or even to secure a uniform type of students, but on the other hand have found a disposition to meet the natural limit or individual tendency, and since we find the greatest conservatism among institutions favoring diversity of degrees, we may conclude that adherence to the old is an indication of conservatism, and that the granting of an A. B. only for all undergraduate courses is a marked and definite tendency toward equality.

One thing more may reasonably be looked for from a study of the college curricula—the relation between secondary and higher education. Where is the line of cleavage, where does the one begin and the other end? The amount of work to be done is practically determined by college entrance requirements and the 60 credits demanded for the degree. Reasoning from the data compiled, it would seem that we may conclude higher education begins with the Junior year of the high school and ends with the close of the Sophomore year of the college. To substantiate this conclusion we have but to note that the first two years of college language conform to the language of the high schools, while much of the mathematics would bear out the same analysis. If it were desirable the same relation might be shown with regard to the exact and social sciences. Practically all institutions give direc-

tion to the student during the Freshman year, but generally all requirements end with the second college year. Two institutions, Chicago and the University of California, recognize a distinct break in the undergraduate course at this period, and the Junior year considered the beginning of more advanced and specialized work. It is possible for a student of language to get four years of Latin and two years both of German and French in the high school and to pursue them through the first two years of college, leaving him to enter on more advanced work at the beginning of his Junior year in college. Likewise a student of the social sciences might begin his advanced work in the high school, take beginning languages in college (excepting Latin), and enter on more characteristic advanced work during the last two years of his college course.

The following table may be of interest as showing the number of institutions in each group that prescribe physical culture or require the undergraduate student to write a thesis:

Of the Women's Colleges,
11 prescribe physical culture, 2 require a thesis
Of the New England Colleges,
10 prescribe physical culture, 2 require a thesis
Of the Large Western State Universities,
9 prescribe physical culture, 1 requires a thesis
Of the Small Western State Universities,
8 prescribe physical culture, 6 require a thesis
Of the Southern State Universities,
5 prescribe physical culture, 4 require a thesis
Of the Large Private Endowed Universities,
1 prescribes physical culture, 1 requires a thesis.

The thesis does not seem to be identified with either the liberal or the conservative institutions; in a few cases credit is allowed for it, but usually no credit is given. In

regard to method of instruction, or facilities for physical education a complete study has not been made. The time varies from a short period each day to two or three hours per week; probably if an average were struck it would amount to about two hours per week for one year. In a few institutions credit is allowed, but in such case the whole required work is about the normal of 60 credits.

GROUP CHARACTERISTICS

In passing to the study of colleges and universities by sections we take up the groups in the order in which they prescribe the greatest amount of work for the undergraduate student.

The New England College curricula present the greatest degree of variety, and a very great diversity in catalogue structure. Including the three colleges that require the whole curriculum, and that amounting to 86 and 95 credits, the average requirements for each college amounts to about 34 credits, or 53 per cent of the four years' course. Omitting these colleges, Boston, St. Anselm, and Holy Cross, we have an average of 27 credits, or 44 per cent of the whole work for graduation. Seven of these colleges require about one year's work; Bowdoin is the most liberal, demanding but 11 credits. The average number of credits for each institution is distributed among the subjects as follows: Foreign language 11, English language 5, Mathematics 8, Exact Sciences 4, Social Science 2, Philosophical Science 4.

As characteristic of this group we may note first the strong emphasis on the classics. The stress on English, Mathematics, and Exact Science is about the same within the group. In the miscellaneous subjects Elocution receives some preference. The Philosophical Sciences are comparatively strong, while the Social Sciences are weak.

We shall not find another group of colleges, in this study, with so large a general average of required work.

With prescribed credits amounting to 14 per cent more than that of the Women's Colleges, and 15 per cent more than the most conservative of the State Universities, one naturally asks, why this great difference? In an old country already well populated, those of the growing generation who do not find room and scope for their activities pass out to other parts, leaving behind a people with a greater degree of homogeneity, and conservatism. In so far as colleges reflect the opinion of their locality they too must be conservative. The early aims of these institutions were cultural, in which religion was no small factor, and the classics was not only the backbone but largely the framework of the curricula. When the elective system was inaugurated in America the classics, in so far as tradition becomes authoritative, were the recognized standards by which education and culture were tested. The conflict of critical judgment with tradition is a slow process that results in a union of the new with the old; but an ultimate and final overthrow of the old is rarely if ever effected. And in this we should not expect the New England Colleges to be an exception, but rather in proportion to the antiquity of their traditions would conservatism prevail over any radical change that might threaten the dignity of the old college curricula.

In looking into the characteristics of each group we find the Southern State Universities the most conservative of the state groups. The average number of credits required for each institution is 23 1-2, a little more than one year, and about 38 per cent of the whole amount of work required for a degree. We may note here also a tendency to adhere to the old curriculum—language, and mathematics. Delaware is the extreme of conservatism, requiring two and one-half years' work or 48 credits out of 80; Virginia, the extreme liberal, has no specific requirements and only 50 credits required for graduation, but 35 fall

under the "elective requirements." The strongest point of resemblance between the institutions of this group is the uniform emphasis placed on foreign language and a steady consensus as to the relative importance of English language, mathematics, and the exact sciences.

The average required credits in the Southern Universities range as follows: Foreign Language 6, English Language 5 2-3, Exact Sciences 4, Mathematics 5, Social Science 1, Philosophical Sciences 9-13. In language and exact science there is a close resemblance to the Women's Colleges, but like the remaining groups the philosophical and social sciences are lightly represented. In amount of work prescribed this group stands 1 per cent lower than the Women's Colleges and 13 per cent higher than the Small Western Universities.

The question that comes up is not so much what is the significance of the curricula, as why this conservatism of the South? There can be no doubt that the foregoing data shows an advance toward elasticity; but why not as liberal as the institutions of the West? It will be seen that the more liberal institutions are in a prosperous locality and well supported financially. The war of 1861-65 reduced the South very much in financial power and left its political institutions in an unstable condition.

In regaining its energies it is not likely that the spirit of the South was in a mood to indulge the whims or extravagances of youth. But rather would public opinion support what was considered essential and forego any indulgence at the expense of discretion. Nor would we expect liberalism of the institution to go ahead of the prosperity of the State, but rather would look for it to fall behind. It would hardly be fair to suppose that the spirit of higher education depended wholly on public opinion and statesmanship; nor would it be just to presume that there were not in the southland fair and broad-minded educators. But

ambition cannot expand in a contracted atmosphere, nor would many remain to strike against impossible conditions. We may then fairly presume that the conservatism of the south is due to the inevitable causes, lack of political and financial support, which resulted in repelling rather than attracting great educators to its fields.

The Women's Colleges stand quite distinctly apart by themselves. The requirements are more extended and more evenly distributed, though not very heavy in any one subject. Radcliff, like Harvard, represents the extreme of liberalism, nothing being required, while Mills is the extreme of conservatism, requiring 33 1-2 credits or 52 per cent of its whole undergraduate course. While Elmira takes the middle ground with one year of prescribed work. The average required work for each college is 23 credits, and 39 per cent of the whole work required for a degree. This prescribed work is distributed among the subjects as follows: Foreign Language 5 credits, English Language 4 1-2 credits, Mathematics 3 credits, Exact Sciences 4 credits, Social Sciences 2 credits, Philosophical Sciences 3 credits. Mathematics receives less attention than any, except the Small Western Universities. The Philosophical Sciences are required in all but three colleges, the Social Sciences are but a trifle weaker than in the New England Colleges, while the English Language is about the same as in both the New England Colleges, and in the Southern State Universities. Bible is required in eight out of 13 of the colleges, and outside of the New England Group are the only colleges that require it at all.

The uniformity found within this group of colleges is more significant when we note the agreement not only of subject emphasized, but in quantity required. The difference from, or likeness to, other colleges will be accounted for not by locality or means of support, but rather in the answers to the questions what to consider is essential edu-

cation for women, and what was the aim of the founders of these institutions? The answers to these questions we will find in a study of the curriculum itself, and in the nature of its subjects. It is evident that emphasis is placed on empirical work. Language is formal and predominantly definite; exact science is the work of the empiricist drawing conclusions from physical experiment. The social sciences may be treated variously, but in a course comprising less than one year philosophic treatment could not be reached. Mathematics, small in amount, could not be other than a drill in accuracy and exact thinking. In the case of philosophical sciences there would appear to be a break in method of treatment, and there may be, but a short course in ethics and psychology, while abstract, could hardly be other than elementary and positive, dealing with dogmatic principles, and consequently clear and comprehensive.

The Large Private Endowed Universities divide into three groups: Three, Harvard, Stanford and Cornell, have the free elective system; Chicago, Yale and Northwesterns each have a requirement of about one-fourth of the college course; the remaining four require two years, or one-half of the undergraduate course. Distributing the whole requirement we find that 14 1-2 credits, or about 24 per cent of the whole college course, falls to each university. Chicago makes a distinct break in the undergraduate course by considering the first two years as preparatory to more specialized university work in the last two. This diversion is not wholly recognized by the other universities yet the last two years are open to free electives, and all but Johns Hopkins and Harvard allow the student to choose one year's work from a professional college.

In this group of universities the elective work is represented by 76 per cent of the college course; the remaining 24 per cent is distributed among the required subjects

with an average for each university as follows: Foreign Language 5 credits, English Language 3 credits, Mathematics 2 credits, Exact Sciences 2 credits, Social Sciences 1.2 credits, Philosophical Science 1.2 credits. Leaving out those that have the entire free elective system, we find that there is a uniform agreement as to the subject emphasized, the chief difference within the group being the amount required. There is to be made one exception, Yale requires no science; Johns Hopkins requires no Mathematics, but the entrance requirements include Analytical Geometry.

The cause for the general elasticity shown in this group of universities is no doubt complex and beyond a thorough treatment in the scope of this paper. Yet there seems to be two potent causes without which a liberal attiture could not well be assumed. We are, in large endowments, enabling them to equip and man every department to a high degree of efficiency. The other cause is found in their geographical situation. In each case we find the location of the most liberal to be in a section of country relatively progressive.

The Small Western State Universities, the conservative, are more liberal than any of the institutions yet discussed with the exception of the above private universities. When the elective work is taken out we have on an average for each university 17 credits, or 27 per cent of the undergraduate course, to be distributed among the following required subjects: Foreign Language 5, English Language 5 1-2, Mathematics 2, Exact Science 3, Social Science 1, Philosophical Sciences 8-13. The most liberal representative of this group is Utah, with a single requirement in English of 3 credits; Oregon is the extreme of conservatism, with 27 1-2 credits prescribed, about one and a half years' work at that university. Wyoming, Montana and North Dakota have slight requirements in the Social

and Philosophical Sciences. Aside from these exceptions we find a marked uniformity both in subject matter and amount prescribed. English Language is emphasized by all, then follows in order Foreign Language, Exact Science and Mathematics. In comparison with institutions that would seem farthest removed from them the Small Western State Universities present a similarity rather apparent than real. We find the prescribed work in Foreign Language and Mathematics to be the same as that of the Large Private Endowed Universities; Exact Sciences one credit more, Social and Philosophical Sciences, trifling in both cases, but somewhat less.

The apparent correspondence grows less when we consider the wide difference within the latter group—three entirely elective and three requiring about half of the work. In contrast to this, we have ten of the Small Western State Universities presenting a solid front of at least one year of required work.

In accounting for the conservatism of this group we find two causes uppermost—lack of funds and sparseness of population. The financial support is not such as would admit of a large faculty, nor will lack of social intercourse allow of modern ideas being agitated and wrought into an aggressive public opinion. Not to allow too much to outside influence and too little to the faculty itself, it can easily be seen how, in a small institution one man, or at least a few of the small faculty, might dominate the organization and give to the curriculum characteristics not the result of deliberate opinion but of a narrow individual view.

The Large Western State Universities conform most closely to a set type and in general permit the greatest amount of election. The prescribed work amounts to ten credits out of the 60, or 16 2-3 per cent of the whole work required for graduation. The ten credits are distributed

among the required subjects as follows: Foreign Language 3, English Language 3, Mathematics 1 6-11, Exact Science 1 7-11, Social Science 3-11, Philosophical Science 3-11.

Missouri has a free elective system, while Ohio represents the extreme of conservatism with a requirement of 30 credits or 50 per cent of the entire undergraduate work. A further division may be noted within the group: Four, Iowa, Indiana, Ohio and California, require modern languages and exact science; five, Wisconsin, Illinois, Michigan, Minnesota and Nebraska, require English language, only. The one thing that makes this group typical is the system of "elective requirements." All but three, Ohio, Iowa and Indiana, conform to the plan, and the latter of these approaches it in requiring the student to choose a major subject, amounting to 15 credits, and pursue it through two consecutive years. In the remaining eight an average of 15 credits fall under the "elective requirements." It may be urged that this system offsets the apparent elasticity of the group; but a careful study would hardly warrant such a conclusion. We will find that the nature of grouping carries with it little absolute restriction. It would not be worth while to go into a full exposition of the system as found in each of the eight universities, but one that is typical and one that conforms least to the type will suffice. Michigan is an instance of the latter. It has the following open to Freshmen: Language, Greek, French, German, Mathematics, Trigonometry, Algebra, Analytical Geometry, History (European); 12 credits must be chosen from these groups, but special permission may be obtained to elect others. A typical example is that of Missouri. The undergraduate student must choose from a list of subjects, usually included in the liberal arts course, four, in each of which he must earn six credits.

The general aim and purpose of the "elective requirement" would seem to be not restriction to some special subject, but rather to secure breadth and yet preserve continuity.

While in this group we note a relatively great amount of freedom it is not in favor of the "laissez faire" proposition, but rather is it a recognition of the individual differences in the college students and a respect for any such tendency. There is no attempt to turn out a definite type of student, and yet there is a recognition of a need for an early shaping toward a definite end. The right of the individual to begin this shaping process earlier in life is recognized by all of these institutions, except Ohio, in the privilege to choose one year of the undergraduate course from a professional school.

The reason for the Large Western Universities being able to work out these characteristics can not be wholly accounted for in a brief space, but surrounding conditions have been favorable, without which their general differences would not have developed. The people had come from different parts of the east, and from Europe. They were in search not of a place in which to establish ancient customs, but were ready to sweep from their minds anything that savored of the old, and to indulge in what was a plausible promise of success. If the old welled up for recognition there were new ideas incident of new surroundings to inhibit, and themselves clamor for realization. The country had resources sufficient to admit of progress, and we find these western universities a unique product of modern civilization.

THE COLLEGE CURRICULA IN 1909-10

PART II.

The foregoing section was written five years ago. A second study for 1909-10 has just been completed. One half decade is scarcely more than an hour in the evolution of educational thought, and a much shorter time in the history of educational institutions. Yet, in this brief period, which has elapsed between the two studies developments have occurred and changes taken place, as can be seen from a study of appendix B, which has been compiled from the official records of colleges and universities.

The Woman's Colleges and the Southern State Universities show little change from the tables of 1905. The New England colleges have on the whole, so far as records could be obtained, reduced the requirements a few hours or have remained the same. One only, Boston University, shows an increase of 3 hrs. in the prescribed work.

The small Western State Universities show a reduction in the 3 per cent in whole number of required credits, and also a change from 65 to 60 in the number of hours required for graduation. Five of the institutions within this group have made considerable change in the number of absolute prescriptions. Of these five only one has raised requirements.

The University of Washington has raised the prescribed work 12 year hours.

The University of Colorado has lowered the prescribed work 10 year hours.

The University of Montana has lowered the prescribed work 14 year hours.

The University of Wyoming has lowered the prescribed work 18 year hours.

The University of Oregon has lowered the prescribed work 20 1-2 year hours.

The percentage of required credits in the large Western State Universities has dropped 4 per cent and the average number of hours prescribed has changed from 10 to 7. Two universities of this group have raised the requirements. Wisconsin shows a change in prescription from 3 hrs. to 9 hrs. But two others of this group have lowered the requirements. Indiana has changed from 25 hours required to 15 hours required. Ohio, which, 5 years ago was the most conservative of the group, has modified its whole system and changed the number of required hours from 30 to 10.

The requirements of the large private universities have dropped 5 per cent, and the average number of hours has been reduced from 14 1-2 to 10. Princeton, the most conservative of this group, has changed from 30 hours required work to 16 hours. This is not a gain for free electives, however, but is perhaps a necessary change due to the tutorial system introduced into that institution in 1906. The most notable change in this group is that of the University of Chicago, from 15 hours to 2 1-3 hours in English, which is a change from a requirement in five different subjects to one. This further goes to show that no one subject is considered absolutely necessary to all students alike.

The plan of requiring certain groups of subjects arbitrarily arranged has given way to a more rational system. The old group courses, classical, Latin, Latin-scientific, Latin-mathematical, etc., have practically disappeared from college registers. Only 10 institutions, and these are found among the southern and New England colleges, retain the old 4 year group course system. A system of elective requirements has taken its place.

The academic subjects have changed likewise in point of emphasis. One subject, practically new, has come in, viz: hygiene. A few institutions require all students to

attend a short course of lectures in personal hygiene. Boston University requires the student to attend lectures on "College Life and Work." This course, seemingly, is calculated to orient the student into the new life as well as give desirable instruction in more personal and hygienic matters—a perspective of his personal relation to society as a whole. Indiana requires a one-hour course in general and personal hygiene, part of which is given separately for women. The State University of Iowa requires attendance upon a course of lectures given by different professors, on personal, moral and mental hygiene.

Three subjects present noteworthy changes. Of the large state universities only one requires mathematics. The number of institutions which formerly required mathematics has fallen from 55 to 49. Aside from the University of Georgia no state institution has a specific requirement in ancient language. Of the large private universities, Princeton is the only institution from which a student could not secure a bachelor's degree without College Latin. A new phrase has come into use in college and universities, viz.: "A language other than English". A requirement in "a language other than English," of from 3 to 6 hours is the general requirement, and 66 of the 78 institutions have a language requirement. The theory generally advanced in favor of a language requirement is that the student will need the language in reading scientific literature. It is questionable, however, if the majority of students ever use their extra language either in or out of college. However this may be the choice of the majority of students, who are obliged to choose, is away from the ancient language and toward the modern. The choices in Yale University for Greek have fallen 33

1-3 per cent in the last 6 years, while choices in favor of German have advanced 20 per cent in the same period of years.

English is the one other subject which is generally prescribed and which reveals some development. Harvard University offers a course (Eng. A) which students deficient in English Composition are required to take, but no college credit is given for work done in this course. The University of Kansas offers a course in rhetoric required of "Freshmen not offering it as a fourth year of entrance English." These indications go to show the college requirement has been made to make up for deficient instruction in the secondary schools. Not because a fifth year of English is a necessity for all students. Where data can be obtained, however, indications are that the majority of students elect one or more courses in English after entering college.

The elective work of the different colleges and universities is gradually taking on the characteristics of a system. Elections are allowed with restrictions, but restrictions are more rational and less dogmatic. This is shown in the system of majors, minors, and required electives. Forty-two as against 20 for 1905 of the 78 institutions have a system of majors, or majors and minors. The average for each of the 42 is 16 hours. A few colleges require a major as low as 9 hours or 3 years, others as high as 25 hours for both major and minor. This is a considerable advance over the major requirements of 1905, which averaged only 3 hours for the 78 institutions. Where there is a small major requirement or none at all it will be noticed there are elective requirements. In most cases both majors and elective requirements are parts of the same elective system.

The average number of free electives for each of the 78 institutions is 19 hours; of required electives 12 hours.

These, together with the average number of major and minor hours make an average for the elective system of 30 hours for each of the 78 colleges and universities.

The plan of dividing the old four-year college course into Junior and Senior colleges is receiving some attention though there is little to show that the plan has as yet developed into a definite system. The two institutions mentioned in the first section of this paper are the chief representatives of the division at the end of the Sophomore year.

Closely parallel to the division into Junior and Senior colleges is the growing practice of allowing the Liberal Arts student to elect a certain number of hours, one or two years from a professional college and to apply the same toward earning a Bachelor's degree. Thirty-two institutions permit the above combination which is an increase of six over the number for 1905. Practically every institution allows the choice of one year from a professional course if such course is found in the college or university.

In this same connection it is worthy of note that the president's report of Harvard University for 1908 emphasizes the fact that 3 years, and not four years, is becoming the normal time for securing a college degree.

Together with the acceptance on the part of the Liberal Arts College of one or two years from a technical or professional college in lieu of the last 2 years of the Liberal Arts course, comes the demand from the technical and professional colleges that the first two years of their courses be made identical with the first two years of the Liberal Arts college. The following, quoted from the president's report of Cornell University for 1909-10—p. p. XXXVI-XXXVIII, is typical:

"In the president's report for 1906-07 (p. p. 57-58), the suggestion was made to the engineering colleges of 'a

fifth year of study in the engineering courses, the additional time to be spent wholly on humanistic studies, while the student, during the first two years of the five-year course, was also pursuing his work in pure science.' * * * During the winter definite proposals were received from Sibley College and from the College of Civil Engineering, embodying the president's suggestion, and in April a co-operative agreement was reached. Henceforward a five-year course will be offered leading to the degree of Civil Engineer, and a similar course leading to the degree of Mechanical Engineer. A student may begin either course upon satisfying the entrance requirements of this college (Liberal Arts) in which he will be in residence for his first two years. Passing then to Sibley College or to the College of Civil Engineering he will receive his technical degree upon the completion of his fifth year in the university. * * * One purpose of requiring that the first two years of a student's residence be in the College of Arts and Sciences and subject to its rules is that he may spend the additional time * * wholly on humanistic studies. * * * The amount of outside work is furthermore so small (at most 10 hours in two years) that in addition to it a capable student may well complete, by the end of his second year, the sixty-hours of Arts work, including six hours in each of the four stipulated underclass groups which will entitle him, if he wishes to continue as a Junior in the College of Arts and Sciences. * * * The five-year course will thus allow the student two years of university experience before he is finally called upon to decide whether his purpose in life will be better served by pursuing an engineering course to the end, or by following instead either some other vocational course, or a general course. * * *

And, finally, the establishment of this five-year course has a wider significance. It may be looked upon as a step

toward the ideal of the Special Committee on Aim and Scope of the Association of American Universities 'that the best American universities will in the future rest their professional courses on a basis of college work which will range from one to four years and that the professional student will spend at least five or six years in study from the day he matriculates in college to the day he receives his professional degree.' ''

The problem seems to be a complicated one of three parts, viz: (1) Require the student to spend three years in securing an A. B. before entering a technical or professional school. (2) Divide the old four-year course in the middle and allow the last two years (the Senior college) to be special; or (3) Retain this Junior and Senior college division but allow the Junior college to be a preparation for the special or technical and professional work of the Senior college.

When the first section of this paper was being written the various academic subjects were in the crucible of the elective system. Today the crucible has yielded us back a product, in the form of a judgment: ''None of these subjects are of specific value to each and every student alike.'' The writer believes this to be the scientific interpretation of the facts compiled in appendix A. and B., or from a careful study of the best educational thoughts of today. Five years ago the elective system was feared as dangerous. In 1910 we know its absence is more dangerous than its presence.

The Elective System has ceased to be a question. It has become a ''problem''. A problem which commands the respect of the ablest intellects—an educational problem demanding solution.

The evil which has accompanied the introduction of electives has been due, in the writer's opinion, to disregard of ''system''. The Elective System is first a system and

second elective. In too many cases the students are confronted with a chaos of subjects presenting no relations or natural connections, and is expected to organize for himself a systematic line of work, which, owing to the nature of things, would be impossible, for the reason that no such organization is inherent in the courses offered. The most educators themselves had done was to group certain available courses, but the grouping was arbitrary and represented an omnibus affair which directed the student to no particular purpose.

President Cyrus Northrup, of the University of Minnesota, replied to an inquiry sent out by the World's Work, in 1908, as follows: "The tendency in educational work most deserving of encouragement is * * * the correction of the abuses of the elective system in colleges." It is noteworthy that none of these replies recommend more required work.

The problem is not the correction of abuses, but rather the organization of courses into *fields* or colleges. The criteria of division should be social and professional needs. The relation of any subject to any organized field of education should be its fundamental relation to that social need, or profession.

Two such divisions have been made within the last decade, viz: The School of Commerce and Business and School of Education. The former was first introduced in the University of Chicago. It has met the needs so well that it has become known as the men's course. The School of Education is already a part of every progressive university. The School of Religion and Social Science is another college division made in response to social demands and the old Divinity courses have been modified accordingly. The College of Letters is likewise a comparatively new departure from the old arts course, and has been established out of consideration for the student of modern

literature. These diversions, not to name others, bear clear relations to each other and to different departments.

The chief difficulty in organizing these *fields* of education is found in what has been termed "departmental vice," i. e., departments are looked upon as wholes whereas they are only parts. Lack of co-operation between departments makes impossible any effective organization into colleges, letters, business or education. And in this absence of co-operation the elective system is seriously impeded, not from any defect in the system, but from lack of fundamental organization due to "departmental vice," —the inability of the college instructor to see his subject in its relation to the whole college course.

The relations of departments to a college is simple but fundamental. Should the College of Business need a peculiar form of geography it is the function of the Department of Geology or Geography to meet that need. Should the same college require a course in the fundamental psychological basis of advertising it rests with the Department of Psychology to provide such a course. When education as a process becomes conscious of its ultimate aim, and departments realize their function to be incidental to the whole educative system, the bulk of "elective chaos" should disappear because of the disappearance of dogmatic and arbitrary linking of subjects into unnatural groups.

There are some indications that departments are already conscious of the false position assumed. In a few instances catering to the needs of other departments is almost a specialty.

On the other hand some subjects have become extremely isolated and unsuited to, not only high schools, but undergraduates in college. Physics has become so technical as to render itself unintelligible to secondary students. (See Educ. Rec., Sep. 1909, p. p. 150-160). The demand for General History, General Science Courses, also

General Mathematics is a recognization of the fact that specialization has been acutely narrow. Entrance requirements to college have been too much the authoratative requirements from associations representing single subjects, (School Rev., May, 1909, p. 329.) and as a result too technical. The educational call now is: Reorganization from the standpoint of the student, which call embodies scientific consideration of individual differences and social needs.

The principles behind all of which are the fundamental principles of the elective system. The student who wishes to work to a purpose, and for a vocation can do so. Students wishing to scatter and loaf, will be drawn into line, or automatically dropped from an environment to which they are constitutionally not adaptable. A procedure which would relieve society of the "sophisticated not educated."

A comparative study of the foregoing tables reveals the following facts:

1. A majority of institutions give the B. A. and B. S. degree only for undergraduate work.
2. The old group courses have given place to elective grouping.
3. All groups of colleges and universities are tending toward a more liberal policy of education.
4. Sixty year hours, or 120 semester hours is the almost universal requirement for graduation.
5. The old 4 year college course is breaking up, leaving the last 2 years for specialization in technical or professional schools.
6. Professional and technical schools are tending toward more elastic courses, and are demanding a more liberal preparation.
7. Personal and mental hygiene has received considerable emphasis as a college subject within the past 5 years.

8. No one subject is essential to a liberal education.

9. The Elective System has gained much ground in all sections of the United States.

Official announcement of the proposed changes in the Harvard curricula came to hand too late to be included in the body of this article. According to The Harvard Bulletin (Feb. 2, 1910), the modified curricula stands about as follows: The whole body of undergraduate subjects of instruction is classified into four fields, viz., Arts of Expression, including literature, language, fine arts and music; Natural Science; Social Sciences; Abstract or deductive lines of thot, including Mathematics and Philosophy. The student is required to elect six courses in some one of these fields, and six courses distributed among three fields. He may take two courses in each of three or one course in one, two courses in another, and three courses in a third field. There are then four courses remaining which may be elected as the student chooses. One course in English is required.

It is worthy of note that the committee recommending the above curricula have found that earnest students do actually make their elections according to some such plan. Pres. Lowell states: "Our primary object was not compulsion, but was to set a standard, to let the undergraduate understand what we believed was the true object to be aimed at in a college education." Pres. Lowell remarks further that a student may deviate from this plan provided he can show the committee good cause for so doing.

LLANEOUS					1905	1910	ELECTIVES							
Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	† Elective Requirements	No. Electives From ‡ Other Colleges	§No. Degrees Given	No. Group Courses	Total Credits For Degree
----	----	----	4½	----	16½	12	----	----	29½	12	⅔	3	3	60
----	----	----	----	----	25	15	15	----	20	----	1	2	----	60
----	----	----	----	----	3	7	12	----	42	20	1	2	----	65
----	----	----	----	----	17	15	----	----	38	----	1	1	----	60
----	----	----	----	----	3	5	----	----	30	28	----	1	----	60
----	----	----	----	----	3	3	----	----	45	12	1	1	----	60
----	----	----	----	----	3	9	----	----	30	18	⅓	1	----	64
----	----	----	----	----	----	2½	12	----	36	24	1	1	----	60
----	----	----	----	----	1	2	----	----	45	11	⅔	2	----	60
----	----	----	----	----	30	19	----	----	24	----	----	3	3	60
----	----	----	----	----	3	11	10	----	30	10	1	2	3	60
----	----		To	tals	104	100	50	----	----	----	----	----	----	609
----	----		†Av	e r a	ge 9	9	5	4	37	10	----	----	----	60
			‡%	of W	hole 17%	15%								
----	----	----	r	r	4	4	----	----	16½	24	----	2	2	64
----	----	----	----	----	20	10½	10	----	35	----	⅓	1	----	65
----	----	----	r	r	16	20	12	8	12	12	----	2	6	66
----	----	----	----	r	22	8	6	----	32	10	----	2	4	64
----	----	----	r	r	22	23	----	----	20	20	----	2	2	62
----	----	----	----	----	20	21½	15	5	40	----	----	2	5	60
----	----	----	r	----	24	15	----	----	40	----	1	2	----	64
----	----	----	r	r	12	18	10	----	40	----	2	2	6	62½
----	----	----	r	r	27½	7	----	----	20	27	----	2	5	70
----	----	----	----	----	15	21	----	----	18	----	½	1	----	60
----	----	----	r	r	3	17	----	----	57	----	----	1	----	61
----	----	----	----	----	18	30	----	----	42	----	2	2	----	60
----	----	----	r	----	21	3	----	----	59	----	c	2	3	80
----	----		To	tals	224	183	53	13	----	----	----	----	----	----
----	----		Aver	age	17	14	4	1	34	9				65
		% of	Wh	ole	26%	23%								
----	----	----	----	r	22	26	----	----	14	21	----	2	3	62
----	----	----	r	----	15	12	24	----	45	----	----	2	2	60
1	----	----	r	----	43	48	----	----	6	----	----	2	3	80
----	2	----	r	r	35	27	----	----	16	----	----	3	3	66
----	----	----	----	----	43	30	----	----	----	25	----	1	6	66
----	----	----	----	----	24	30	----	----	----	----	----	1	3	62
----	----	----	r	r	22	2⅔	----	----	16	26	----	2	----	62
----	----	----	r	r	13	18	----	----	30	14	----	1	3	60
----	1½	----	----	----	38	24	----	----	16	----	----	2	2	70
----	----	----	r	r	29	12	----	----	----	36	----	2	----	65
----	----	----	----	----	10	18	----	----	30	30	1	1	----	60
----	----	----	----	----	----	9	----	----	15	35	1	1	----	50
----	----	----	----	----	18½	18	15	8	51	----	2	2	----	70
----	----		To	tal	314	214	39	8	----	----				433
----	----		Aver	age	23	22	3	½	17	14				64
		% of	Wh	ole	37%	35%								

APPENDIX A

Prescribed and Elective Work as compiled from University and College Catalogues for 1904-5

	INSTITUTIONS	LANGUAGE OTHER THAN ENGLISH						ENGLISH LANGUAGE				MATHEMATICS						EXACT SCIENCES							SOCIAL SCIENCES														PHILOSOPHICAL SCIENCES				MISCELLANEOUS						1905	1910	ELECTIVES						
		Latin	Greek	French	German	Spanish	Total	Rhetoric	Composition	Literature	Total	Algebra	Geometry	Trigonometry	Analytical Geometry	Calculus	Total	Physics	Chemistry	Botany	Geology	Biology	Zoology	Totals	General History	Ancient History	Med. History	Mod. History	European History	American History	Political History	Total	Sociology	Economics	Total	Psychology	Ethics	Logic	Total	Bible	Elocution	Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	† Elective Requirements	No. Electives From ‡ Other Colleges	§No. Degrees Given	No. Group Courses	Total Credits For Degree
	LARGE WESTERN STATE UNIVERSITIES																																																							
1	California						6		3		3	1	1	1			3							4½																					4½		16½	12			29½	12	⅝	3	3	60
2	Indiana						10		3	2	5													6																					25	15	15		20		1			
3	Illinois										3																																		3	7	12		42	20	1	2		65
4	Iowa			4	4		8		2	3	5		2	1	1		4																											17	15			38		1	1		60
5	Kansas										3																																		3	6			30	28		1		60
6	Michigan							3			3																																		3	3			45	12	1	1		60
7	Minnesota							3			3																																		3	9	½		30	18	½	1		64
8	Missouri																																													2½	12		36	24	1	1		60
9	Nebraska						1																																						1	2			45	11	⅝	2		60
10	Ohio			4	4		8	1		2⅓	3⅓						5	1⅓	2⅔	1⅓		1⅓	2	8⅔							2		1⅓	1⅓	1		1⅓	2⅓						30	19			24		3	3	60
11	Wisconsin										3																																		3	11	10		30	10	1	2	3	60
	Totals						32				32						17							18⅓							2		1½				2⅓						Totals		104	100	50							
	% of Prescribed Work						29%				29%						15%							16%							1.8		1%				2%						†Average		9	9	5	4	37	10				60
																																											‡% of Whole		17%	15%								
	SMALL WESTERN STATE UNIVERSITIES																																																						
12	Arizona										4																																	r	r	4	4			16½	24		2	2	64
13	Colorado						5				5						5							5																					20	10½	10		35		⅓	1		65
14	Idaho						8	3	5		8																																	r	r	16	20	12	8	12	12		2	6	66
15	Montana							2		4	6						8																			2	2			2				r	r	22	8	6		32	10		2	4	64
16	Nevada						6		3	3	6						3							4							3													r	r	22	23			20	20		2	2	62
17	New Mexico						8		3		3		2	2			4							4																					r	r	22	23			20			2	2	62
18	North Dakota						8	4			4						4							4															4						r	r	20	21½	15	6	40			2	5	60
19	Oklahoma						4		3½		3½													2½							2													r	r	24	15			40		1	2		64
20	Oregon						9	4	2	3	9			1½			1½		5					5																					r	r	12	18	10		40		2	2	6	62½
21	South Dakota						6				3						3		2					3																					r	r	27½	7			26	27		2	5	70
22	Utah							3			3																																			15	21			18		½	1		60
23	Washington						6	6		6	12																																	r	r	3	17			57			1		61
24	Wyoming						5	2		3	5	1⅔		1⅔	1⅔		5							5							5						2							r		21	3			59		c	2	3	80
	Totals						65				71						25							40							5						8						Totals		224	183	53	13						
	% of Prescribed Work						28				32						11%							17%							2.2%						4%						Average		17	14	4	1	34	9				66
																																											‡% of Whole		26%	23%								
	SOUTHERN STATE UNIVERSITIES																																																					
25	Alabama						6	4			7	2	2	2			6							3																1					r	22	26			14	21		2	3	62
26	Arkansas						6			3	6		1½	1½			3																												r	15	12	24		45			2	2	60
27	Delaware			4	4	4	12	3	3		9	1⅔		1⅔	1⅔		5	3	4	2				12							3		2				2		2	1			r	48	48			6			2	3	80
28	Florida				6	6	12			3	6						6	3	3			3		6							5						3				2		r	r	35	27			16			3	3	66
29	Georgia						12	3			6½	2	3	3	2		10	3	1½	1½		3		6					1½	1½	3	6					1½	3							43	30				25		1	6	66
30	Louisiana						6	4			8	2	2	2	2		8							2																					24	30						1	3	62
31	*Mississippi						6		2½	4	5	1	1	1⅓			3½	2	2					4							2													r	r	22	2⅔			16	26		2		62
32	North Carolina						3	1½	3	2½	6						4																												r	r	13	18			30	14		1	3	60
33	South Carolina						6	2	2	1½	8	2	3	2	1		8	3						3							6			1½			3				1½				38	24			16			2	2	70
34	Tennessee	6					6	3		4	6	3⅔	1⅔	2	1		8	3	6					9																			r	r	29	12			36			2		65
35	Texas								3	3	6		2	2			4																													10	18			30	30	1	1		60
36	Virginia									3																																				9			15	35	1	1		50
37	West Virginia						15	3½			3½																																			18½	18	15	8	51		2	2		70
	Totals						90				75						65							52							22						11						Totals		314	214	39	8						433
	% of Prescribed Work						27%				23%						22%							16%							6%						3%						Average		23	22	3	½	17	14				64
																																											‡% of Whole		37%	35%								

r Signifies subject is required but not counted toward a degree.
* Data from 1905 catalogue.
† Numbers in this column signify years or parts of years.
‡ Average for each institution of the particular group.
§ Per cent of whole work required for a degree.
‖ The number of different degrees, usually 2, signifies A. B. and B. S.

ELLANEOUS					1905	1910	ELECTIVES							
Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	Elective Requirements	No. Electives From Other Colleges	No. Degrees Given	No. Group Courses	Total Credits For Degree
----	----	----	r	----	15	3½	12	9	----	26	1	3	----	60
----	----	----	----	----	25½	17	----	---	34½	----	1	1	----	60
----	----	----	----	----	----	3	----	----	60	----	1	1	----	60
----	----	----	----	----	----	----	----	----	60	----	----	2	----	60
----	----	----	----	----	27	24	----	----	2	----	----	1	4	45
----	----	----	----	----	----	----	10	10	40	----	----	1	----	60
----	----	----	----	----	10½	9	10	5	33	1½	1	2	----	60
1	----	----	----	----	30	16	----	----	30	----	----	2	----	60
----	----	----	----	----	22	22	----	----	20	18	1	2	----	60
----	----	----	----	----	15	9	----	----	30	15	½	2	----	60
----	----				To tals	104	32	24	----	----	----	----	----	----
----	----				Aver age	10	3	1	30	6	---	----	----	58½
		% of			Whole	16⅔ %								
----	----	----	----	----	15	15	----	----	----	15	----	2	----	60
1	----	---	r	----	31	15	----	----	----	29	----	1	----	60
----	----	----	----	r	15	18	----	----	35	----	----	2	----	60
----	----	----	----	----	86	86	----	----	----	----	----	1	----	86
1	----	----	r	----	11	8	----	----	35	16	----	1	----	60
----	----	----	r	----	35	22	----	----	----	25	----	2	----	60
----	----	----	----	----	20	20	----	----	----	40	----	1	----	60
----	2	----	r	----	22	20	----	----	----	35	----	2	----	60
----	1	----	----	----	16	16	9	6	----	46	----	1	----	61
----	----	----	----	----	26	26	----	----	----	----	----	1	2	60
----	2	----	----	4	86	86	----	----	----	----	----	1	----	86
----	----	----	----	----	32	32	----	----	28	----	----	2	2	60
----	----	----	7	----	56	58	----	----	----	----	----	1	----	60
----	----	----	13	----	95	95	----	----	----	----	----	1	----	95
----	----	----	r	----	24	24	----	----	27	----	----	2	----	60
----	----	----	----	----	28	21	9	9	18	----	----	2	----	64
---	----	----	----	----	18	8	----	----	----	----	----	3	2	60
----	----	----	----	----	12	9	7½	----	21	18	----	1	----	60
----	----				To tals	575	25	15	----	----	----	----	----	----
----	----				Aver age	32	1	5–6	10	14	----	----	----	65
		% of			Whole	50								
3	----	----	r	----	22	39	----	----	39	----	----	1	----	60
----	----	----	----	----	27	21	----	----	33	----	----	1	----	60
----	----	----	r	----	25	25	10	10	10	25	----	1	----	60
----	----	----	r	----	15	15	----	----	10	35	----	2	----	60
----	----	----	r	----	33½	24½	----	----	11	12	----	2	2	64
----	----	----	r	----	28½	31½	----	----	----	----	----	1	----	56
----	----	----	----	----	----	----	----	----	----	----	----	1	----	60
----	----	----	r	----	39	33	----	----	9	12	----	1	----	60
----	----	----	r	----	19	24	12	----	41	----	----	2	----	60
----	----	----	r	r	21	20	----	----	39	----	----	1	----	60
----	----	----	r	----	21	21	----	----	39	----	----	1	----	60
----	----	----	----	----	31	22	12	9	29	----	----	1	----	60
----	----	----	r	----	24	26	----	----	26	----	----	1	----	60
----	----				To tals	301	34	19	----	----	----	----	----	780
----	----				Aver age	23	3	1	21	7	----	----	----	60
		% of			Whole	39%								

and averages for the group.

APPENDIX A

Prescribed and Elective Work as compiled from University and College Catalogues for 1905

	INSTITUTIONS	LANGUAGE OTHER THAN ENGLISH						ENGLISH LANGUAGE				MATHEMATICS						EXACT SCIENCES						
		Latin	Greek	French	German	Spanish	Total	Rhetoric	Composition	Literature	Total	Algebra	Geometry	Trigonometry	Analytical Geometry	Calculus	Total	Physics	Chemistry	Botany	Geology	Biology	Zoology	Totals
	LARGE PRIVATE ENDOWED UNIVERSITIES																							
38	Chicago	----	----	3	3	----	5	1½	1⅔	----	3	----	----	----	----	----	3⅓	----	----	----	----	----	----	3⅓
39	Columbia	----	----	----	----	----	9	----	5	----	5	1	1	1	----	----	3	----	----	----	----	----	----	4
40	Cornell	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
41	Harvard	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
42	Johns Hopkins	----	----	----	4	4	8	3	----	3	6	----	----	----	----	----	----	----	----	----	----	----	----	4
43	Leland Stanford	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
44	North Western	----	----	----	----	----	3½	1½	----	1	2½	1	----	1	----	----	2	----	----	----	----	----	----	2
45	Princeton	----	----	----	----	----	12	2	----	1	3	2	1	1	1½	----	5½	----	----	----	----	----	----	4
46	Univer. of Pa	----	----	----	----	----	6	----	3	3	6	----	----	----	----	----	----	----	----	----	----	----	----	4
47	Yale	3	3	3	----	----	9	----	----	3	3	1	1	1	----	----	3	----	----	----	----	----	----	----
	Totals	----	----	----	----	----	52	----	----	----	28	----	----	----	----	----	19	----	----	----	----	----	----	21
	% of Prescribed Work	----	----	----	----	----	36%	----	----	----	16%	----	----	----	----	----	13%	----	----	----	----	----	----	14%
	NEW ENGLAND COLLEGES																							
48	Amherst	3	3	----	----	----	9	----	3	----	3	----	----	----	----	----	3	----	----	----	----	----	----	----
49	Bates	3	----	2	3	----	8	3	----	3	5	1⅔	1⅔	1⅔	----	----	5	2	2	1	----	----	----	5
50	Boston University	----	----	2	2	----	4	----	2	----	2	1	1	1	----	----	3	----	----	----	----	----	----	2
51	Boston College	14	12	2	2	----	30	----	----	----	10	----	----	4	4	----	8	6	----	----	----	----	----	6
52	Bowdoin	----	----	3	3	----	6	1½	1½	----	3	----	----	----	----	----	----	----	----	----	----	----	----	----
53	Brown	----	----	----	----	----	12	3	----	3	6	----	----	----	----	----	5	----	----	----	----	----	----	3
54	Clark	----	----	5	5	----	10	----	----	----	5	----	----	----	----	----	----	----	----	----	----	----	----	5
55	Colby	----	----	3	3	----	6	4	----	----	4	4	2	----	----	----	6	3	----	----	----	----	----	3
56	†Dartmouth	----	----	----	----	----	9	----	2½	----	2½	2	----	2	----	----	4	----	----	----	----	----	----	----
57	†French	4	----	9	----	----	13	3	----	----	3	----	----	----	----	----	5	----	1	----	1	----	1	3
58	†Holy Cross	14	10	----	----	----	24	----	----	----	12	----	2	2	2	2	8	5	1	----	1	----	⅔	7⅔
59	†Middlebury	----	6	----	3	----	9	4	----	----	4	1⅓	1⅓	1⅓	----	----	4	3	1	----	----	----	----	4
60	†Norwich	5	----	----	----	----	10	3	----	5	8	----	----	----	----	----	5	3	5	1	----	1	----	10
61	†St. Anselm	16	12	----	----	----	28	----	----	----	10	----	----	----	----	----	10	2	2	----	----	----	----	4
62	†Trinity	4	----	----	----	----	7	----	4	----	4	1⅓	1⅓	1⅓	----	----	4	3	3	----	----	----	----	6
63	Tufts	----	----	----	----	----	9	----	3	----	3	1⅓	----	----	----	----	3	----	----	----	----	----	----	6
64	Wesleyan	----	----	----	----	----	3	----	----	----	2	1⅓	1⅓	1⅓	----	----	4	1½	1½	----	----	----	----	4
65	Williams	3	----	----	----	----	6	----	----	----	2	----	----	----	----	----	4	----	----	----	----	----	----	----
	Totals	----	----	----	----	----	197	----	----	----	88	----	----	----	----	----	81	----	----	----	----	----	----	68
	% of Required Work	----	----	----	----	----	30%	----	----	----	14%	----	----	----	----	----	13%	----	----	----	----	----	----	11%
	WOMEN'S COLLEGES																							
66	Baltimore	----	----	----	----	----	3	2	2	----	4	----	1	1	----	----	2	1½	1½	----	----	----	----	3
67	Barnard	3	----	3	3	----	9	3	3	----	6	----	----	----	----	----	3	----	----	----	----	----	----	3
68	Bryn Mawr	----	----	----	----	----	5	2½	2½	5	10	----	----	----	----	----	----	----	----	----	----	----	----	5
69	Elmyra	4	----	----	----	----	7	2	----	1	3	2	2	----	----	----	4	----	----	----	----	----	----	----
70	Mills	----	----	----	----	----	9	3	----	3	6	----	----	----	----	----	3½	----	----	----	----	----	----	7½
71	Mt. Holyoke	4	----	----	----	----	8	----	4	2	6	----	----	----	----	----	4	----	----	----	----	----	----	4
72	Radcliff	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
73	Randolph Mason	3	----	----	----	----	9	2	2	2	6	----	----	----	----	----	4	----	----	----	----	----	----	6
74	Rockford	----	----	----	----	----	----	1½	1½	----	3	----	----	----	----	----	4	----	----	----	----	----	----	5
75	Smith	----	----	----	----	----	6	----	2	----	2	----	----	----	----	----	3	----	----	----	----	----	----	3
76	Vassar	----	----	----	----	----	6	----	3	----	3	----	----	----	----	----	3	----	----	----	----	----	----	3
77	Wellesley	----	----	----	----	----	4	----	----	----	4	----	----	----	----	----	6	----	----	----	----	----	----	6
78	Wells	3	----	----	----	----	3	----	2	3	5	----	----	----	----	----	3	----	----	----	----	----	----	4½
	Totals	----	----	----	----	----	69	----	----	----	58	----	----	----	----	----	37	----	----	----	----	----	----	50
	% of Required Work	----	----	----	----	----	23%	----	----	----	19%	----	----	----	----	----	12%	----	----	----	----	----	----	16%

	INSTITUTIONS	SOCIAL SCIENCES										PHILOSOPHICAL SCIENCES				MISCELLANEOUS							1905	1910	ELECTIVES							
		General History	Ancient History	Mod. History	Med. History	European History	American History	Political History	Total	Sociology	Economics	Total	Psychology	Ethics	Logic	Total	Bible	Elocution	Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	Elective Requirements	No. Electives From Other Colleges	No. Degrees Given	No. Group Courses	Total Credits For Degree
	LARGE PRIVATE ENDOWED UNIVERSITIES																															
38	Chicago	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	r	----	15	3½	12	9	----	26	1	3	----	60
39	Columbia	----	----	----	----	----	----	----	3	----	1½	1½	----	----	----	1½	----	----	----	----	----	----	----	25½	17	----	----	34½	----	1	1	----	60
40	Cornell	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	3	----	----	60	----	1	1	----	60
41	Harvard	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	60	----	----	2	----	60
42	Johns Hopkins	----	----	----	----	----	----	2	2	----	2	2	----	----	----	5	----	----	----	----	----	----	----	27	24	----	----	2	----	----	1	4	45
43	Leland Stanford	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	10	10	40	----	----	1	----	60
44	North Western	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1½	----	----	----	----	----	----	----	10½	9	10	5	33	1½	1	3	----	60
45	Princeton	----	----	----	----	----	----	1	1	----	1½	1½	1	1½	1	3½	----	----	1	----	----	----	----	30	16	----	----	30	----	----	2	----	60
46	Univer. of Pa	----	----	----	----	----	----	2	2	----	----	----	----	----	----	2	----	----	----	----	----	----	----	22	22	----	----	20	18	1	2	----	60
47	Yale	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	15	9	----	----	30	15	½	2	----	60
	Totals	----	----	----	----	----	----	----	8	----	4½	----	----	----	----	12½	----	----	----	----	----	----	Totals	145	101	32	24	----	----	----	----	----	----
	% of Prescribed Work	----	----	----	----	----	----	----	6%	----	3%	----	----	----	----	8%	----	----	----	----	----	% of	Average	14½	10	3	1	30	6	----	----	----	58½
																						% of	Whole	20%	16⅔ %								
	NEW ENGLAND COLLEGES																															
48	Amherst	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	15	15	----	----	15	----	2	----	60
49	Bates	----	----	----	----	----	----	----	----	----	2	2	2	2	----	4	2	1⅓	1	----	----	r	----	31	15	----	----	29	----	1	----	60
50	Boston University	----	----	----	----	----	----	----	----	----	----	----	1½	----	----	1½	----	----	----	----	----	----	r	15	18	----	----	35	----	2	----	60
51	Boston College	----	----	----	----	----	----	2	2	----	2	2	----	----	----	16	4	4	----	----	----	----	----	86	86	----	----	----	----	1	----	60
52	Bowdoin	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	----	----	r	----	11	8	----	----	35	16	1	----	60
53	Brown	----	----	----	----	----	----	----	----	----	3	----	----	----	----	3	----	----	----	----	----	r	----	35	22	----	----	----	25	2	----	60
54	Clark	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	20	20	----	----	----	40	1	----	60
55	Colby	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	2	----	----	r	----	22	20	----	----	----	35	2	----	60
56	†Dartmouth	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----	16	16	9	6	----	46	1	----	61
57	†French	----	----	----	----	----	----	----	----	----	----	----	2	----	----	2	----	----	----	----	----	----	----	26	26	----	----	----	----	1	2	60
58	†Holy Cross	----	----	----	----	----	----	6	6	----	----	----	4	6	6	16	----	4	----	2	----	----	4	86	86	----	----	----	----	1	2	86
59	†Middlebury	----	----	----	----	----	----	4	4	----	1	1	2	1	1	4	----	1	----	----	----	----	----	32	32	----	----	28	----	2	2	60
60	†Norwich	----	----	----	----	----	----	6	6	----	1	1	1	1	1	3	----	----	----	----	----	----	7	56	56	----	----	----	----	1	----	60
61	†St. Anselm	----	----	----	----	----	----	6	6	----	3	3	----	----	----	16	13	4	----	----	----	----	13	95	95	----	----	----	----	1	----	95
62	†Trinity	----	----	----	----	----	----	----	----	----	----	----	----	1½	1½	3	----	----	----	----	----	----	r	24	24	----	----	27	----	2	----	60
63	Tufts	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6	----	----	----	----	----	----	----	28	21	9	9	18	----	2	----	64
64	Wesleyan	----	----	----	----	----	----	----	----	----	2	2	1½	1	----	2½	----	----	----	----	----	----	----	18	8	----	----	----	----	3	2	60
65	Williams	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	12	9	7½	----	21	18	1	----	60
	Totals	----	----	----	----	----	----	33	----	11	----	----	----	----	----	75	----	----	----	----	----	----	Totals	629	575	25	15	----	----	----	----	----	----
	% of Required Work	----	----	----	----	----	----	5½ %	----	2%	----	----	----	----	----	12%	----	----	----	----	----	----	Average	34	32	1	5-6	10	14	----	----	----	65
																						% of	Whole	53	50								
	WOMEN'S COLLEGES																															
66	Baltimore	----	----	----	----	----	----	----	2	----	----	----	1½	----	----	3	2	----	3	----	----	r	----	22	39	----	----	39	----	1	----	60
67	Barnard	----	----	----	----	----	----	3	----	1½	----	----	1½	----	----	1½	----	----	----	----	----	----	----	27	21	----	----	33	----	1	----	60
68	Bryn Mawr	----	----	----	----	----	----	----	----	----	----	----	2	3	----	5	----	----	----	----	----	r	----	25	25	10	10	10	25	1	----	60
69	Elmyra	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----	r	----	15	15	----	----	10	35	2	----	60
70	Mills	----	----	----	----	----	----	2	2	----	----	----	1½	2	----	3½	2	----	----	----	----	r	----	33½	24½	----	----	11	12	2	2	64
71	Mt. Holyoke	----	----	----	----	----	----	2	2	----	----	----	1½	----	----	1½	3	1	----	----	----	r	----	28½	31½	----	----	----	----	1	----	56
72	Radcliff	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	60
73	Randolph Mason	----	----	----	----	----	----	3	3	----	----	----	----	----	----	6	----	----	----	----	----	r	----	39	33	----	----	9	12	1	----	60
74	Rockford	----	----	----	----	----	----	3	3	----	----	----	----	3	----	3	----	----	----	----	----	r	----	19	24	12	----	41	----	2	----	60
75	Smith	----	----	----	----	----	----	2	2	----	----	----	----	----	3	3	----	----	----	----	----	r	r	21	20	----	----	39	----	1	----	60
76	Vassar	----	----	----	----	----	----	3	3	----	----	----	1½	1½	----	3	----	----	----	----	----	r	----	21	21	----	----	39	----	1	----	60
77	Wellesley	----	----	----	----	----	----	4	4	----	----	----	----	----	----	4	----	----	----	----	----	----	----	31	22	12	9	29	----	1	----	60
78	Wells	----	----	----	----	----	----	3	3	----	----	----	----	----	1½	3	----	----	----	----	----	r	----	24	26	----	----	26	----	1	----	60
	Totals	----	----	----	----	----	----	22	----	----	----	----	----	----	----	36	----	----	----	----	----	----	Totals	23	301	34	19	----	----	----	----	----	780
	% of Required Work	----	----	----	----	----	----	7%	----	----	----	----	----	----	----	12%	----	----	----	----	----	----	Average	28	23	3	1	21	7	----	----	----	60
																						% of	Whole	39%	39%								

† Tabulations for numbers 56 to 62 inclusive are from 1905 catalogues. A number of catalogues for 1910 have come to hand since this MS. has gone to press, but changes are too slight to alter per cents and averages for the group.

LLANEOUS					1910	1905	ELECTIVES							
Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	† Elective Requirements	No. Electives From ‡ Other Colleges	§No. Degrees Given	No. Group Courses	Total Credits For Degree
---	---	---	r	---	12	16½	18	---	33	3	2	3	---	62
1	---	1	r	---	13	25	15	---	20	12	2	1	---	60
---	---	---	2	---	7	3	12	---	---	20	†c	1	---	60
1	---	---	2½	---	15	17	12	---	21	12	2	1	---	60
---	---	---	---	---	---	3	15	---	30	15	2	1	---	60
---	---	---	r	---	3	3	---	---	45	12	2	1	---	60
---	---	---	r	---	9	3	9	24	21	---	2	1	---	63
---	---	---	1	---	2½	---	12	6	39½	---	c	1	---	60
---	---	---	4	---	2	1	12	---	30½	13	2	1	---	60½
---	---	---	r	---	10	30	12	---	29	9	1	1	---	60
---	---	---	4	r	5	3	10	---	---	14	2	1	---	60
			To	tals	78	104	127	30	270	90	---	---	---	665
---	---	†Av	e r a	ge	7	9	11	3	24	8	---	---	---	60
		‡%	of W	hole	11%	16%								
---	---	---	1½	r	4	4	---	---	---	30	---	2	---	65½
---	---	---	3	---	10½	20	25	---	24½	---	2	1	---	60
---	---	---	2	---	20	16	12	8	12	12	2	2	---	65
---	---	---	4	---	8	22	15	---	29	9	---	2	---	60
---	---	---	4	r	23	22	20	---	10	---	---	2	2	60
---	---	---	---	r	21½	20	12	---	26½	---	---	1	---	60
---	---	---	2	---	15	24	---	---	25	20	2	1	---	60
---	---	---	2	r	18	12	15	---	15½	11½	---	1	---	60
---	---	---	2	r	7	27½	10	---	43	---	---	2	---	60
---	---	---	---	---	21	15	12	---	11	18	---	1	---	62
---	---	---	r	r	3	3	12	12	23	---	2	2	---	60
---	---	---	4	---	30	18	12	8	10	---	½	1	---	60
---	---	---	---	---	3	21	15	10	5	---	---	2	---	60
			To	tals	183	224	160	38	244	100	---	---	---	792
---	---	---	Aver	age	14	17	12	3	19	6	---	---	---	60
		% of	Wh	ole	23%	26%								
---	---	---	2	---	26	22	---	---	34	---	---	2	---	70
---	---	---	2	---	12	15	---	---	40	2	c	2	---	64
---	---	---	r	---	48	48	---	---	6	---	---	2	---	80
---	---	---	1	---	27	35	---	---	43	---	---	2	---	70
---	---	---	1	---	30	43	---	---	15	18	---	1	---	66
---	---	---	---	---	30	24	---	---	20	16	---	1	---	68
---	---	---	---	---	20⅔	22	6	---	16	26	---	2	---	62
---	---	---	---	---	18	13	---	---	---	42	---	1	---	60
---	---	---	---	---	24	38	---	12	---	24	---	2	---	60
---	---	---	---	---	12	29	---	---	---	68	---	2	---	80
---	---	---	2	---	18	10	---	---	30	---	---	1	---	48
---	---	---	---	---	9	---	---	---	---	39	---	2	---	39
---	---	---	---	r	18	18	15	15	---	---	1	2	---	70
			To	tal	294	314	21	27	204	229	---	---	---	837
---	---	---	Aver	age	22	23	2	2	15	17	---	---	---	64
		% of	Wh	ole	37%	38%								

APPENDIX B

Prescribed and Elective Work as compiled from University and College Catalogues for 1909-10

	INSTITUTIONS	LANGUAGE OTHER THAN ENGLISH						ENGLISH LANGUAGE				MATHEMATICS						EXACT SCIENCES							SOCIAL SCIENCES														PHILOSOPHICAL SCIENCES				MISCELLANEOUS						1910	1905	ELECTIVES							
		Latin	Greek	French	German	Spanish	Total	Rhetoric	Composition	Literature	Total	Algebra	Geometry	Trigonometry	Analytical Geometry	Calculus	Total	Physics	Chemistry	Botany	Geology	Biology	Zoology	Totals	General History	Ancient History	Med. History	Mod. History	European History	American History	Political History	Total	Sociology	Economics	Total	Psychology	Ethics	Logic	Total	Bible	Elocution	Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	† Elective Requirements	No. Electives From †Other Colleges	§No. Degrees Given	No. Group Courses	Total Credits For Degree
	LARGE WESTERN STATE UNIVERSITIES																																																							
1	California						3				3						1½						4½																				r		12	16½	18		33	3	2	3		62
2	Indiana						10		2		2																														1		1	r		13	25	15		20	12	2	1		60
3	Illinois						4	3			3																																	2		7	3	12			20	†e	1		60
4	Iowa						10				5																														1			2½		15	17	12		21	12	2	1		60
5	Kansas																																											r		3	3	15		30	15	2	1		60
6	Michigan							3			3																																	r		9	3	9	24	45	12	2	1		60
7	Minnesota						3	3			3												3																					r		9	3			21		2	1		63
8	Missouri										2½																																	1		2½		12	6	39½		e	1		60
9	Nebraska										2																																	4		2	1	12		30½	18	2	1		60½
10	Ohio						8		2		2																																	r		10	30	12		29	9	1	1		60
11	Wisconsin						3				3																																	4	r	5	3	10			14	2	1		60
	Totals						41				28						1½						7½																					To	tals	78	104	127	30	270	90				665
	% of Prescribed Work						5%				3%												1%																					†Av	erage	7	9	11	3	24	8				60
																																											‡%	of Whole	11%	16%								
	SMALL WESTERN STATE UNIVERSITIES																																																						
12	Arizona										4																																	1½	r	4	4				30		2		65½
13	Colorado										5																								3			2½						3		10½	20	25		24½		2	1		60
14	Idaho						8				8						4																											2		20	16	12	8	12	12	2	2		65
15	Montana						6		2		2																																	4		8	22	15		29	9		2		60
16	Nevada						7				6						3						4												3									4	r	23	22	20		10			2	2	60
17	New Mexico						8				3						2½						8																						r	21½	20	12		26½			1		60
18	North Dakota						7				4												4																					2		15	24			25	20	2	1		60
19	Oklahoma						6				3						3						6																					2	r	18	12	15		15½	11½		1		60
20	Oregon						7																																				2	r	7	27½	10		43			2		60
21	South Dakota						6				3						3						6																							21	15	12		11	18		1		62
22	Utah										3																																	r	r	3	3	12	12	23		2	2		60
23	Washington						8				8						2						4												2	2								4		30	18	12	8	10		½	1		60
24	Wyoming										3																																			3	21	15	10	5			2		60
	Totals						63				52						17½						32												5									To	tals	183	224	160	38	244	100				792
	% of Prescribed Work						34%				28%						7%						18%												2%									Aver	age	14	17	12	3	19	6				60
																																											% of	Whole	23%	26%								
	SOUTHERN STATE UNIVERSITIES																																																					
25	Alabama						10	3	2	2	7						3						4												2									2		26	22			34			2		70
26	Arkansas						6				6																																	2		12	15			40	2	c	2		64
27	Delaware						12				9						5	3	4		2		3	12											3	3	3	6				3		r		48	48			6			2		80
28	Florida						8				3						6	9	3					6											2									1		27	35			43			2		70
29	Georgia	3					9				6						9	3						3											3									1		30	43			15	18		1		66
30	Louisiana						9				6						6	3						3											3											30	24			20	16		1		68
31	*Mississippi						6				5						3½	2	2					4											2											20⅔	22	6		16	26		2		62
32	North Carolina						7				7						4																													18	13				42		1		60
33	South Carolina						4				4						5						2												4											24	38		12		24		2		60
34	Tennessee						6				0						3						3																							12	29				68		2		80
35	Texas						6				6						3						3																					2		18	10			30			1		48
36	Virginia						3				3						3						3																							9							1		48
37	West Virginia						15				3½																																	r		18	18	15	15		39		2		39
	Totals						111				71½						52						43												19		8		5					To	tal	294	314	21	27	204	229				70
	% of Prescribed Work						34%				24%						17%						14%												6%		3%		2%					Aver	age	22	23	2	2	15	17				837
																																											% of	Whole	37%	38%								64

c Signifies a certain number of credits.
r Signifies subject is required but not counted toward a degree.
* Data from 1905 catalogue.
† Numbers in this column signify years or parts of years.
‡ Average for each institution of the particular group.
§ Per cent of whole work required for a degree.
‖ The number of different degrees, usually 2, signifies A. B. and B. S.

LLANEOUS					1910	1905	ELECTIVES							
Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	Elective Requirements	No. Electives From Other Colleges	No. Degrees Given	No. Group Courses	Total Credits For Degree
----	----	----	r	----	3⅓	15	----	---	26⅔	30	2	3	----	60
----	----	----	----	----	17	25½	----	----	30	13	2	2	----	60
----	----	----	----	----	----	----	10	----	50	----	1	2	----	60
----	----	----	----	----	----	----	----	----	----	----	----	2	----	60
----	----	----	----	----	24	27	9	6	21	----	----	2	----	60
----	----	----	----	----	----	----	20	----	40	----	1	1	----	60
----	----	----	----	----	9	10½	----	----	----	----	2	2	----	60
----	----	----	----	----	16	30	----	----	----	44	----	3	----	60
----	----	----	----	----	22	22	9	9	----	20	1	2	----	60
----	----	----	----	----	9	15	12	18	6	15	2	1	----	60
----	----			To	tals	100	145	51	33	243	112	----	----	----	600
----	----			Aver	age	10	14½	5	3	24	11	----	----	----	60
		% of		Who	le	16⅔ %	20%								
1½	----	----	----	----	15	15	----	----	9	36	----	2	----	60
----	----	----	r	----	15	31	15	20	10	----	----	2	----	60
----	----	----	r	----	18	15	8	8	26	----	2	3	----	60
----	----	----	r	----	86	86	----	----	----	----	----	1	----	86
----	----	----	r	----	8	11	6	4	28	----	1	2	----	60
----	----	----	----	----	22	35	----	----	38	----	----	3	----	60
----	----	----	----	----	20	20	----	----	40	----	----	2	----	54
----	----	----	----	----	20	22	----	----	40	----	----	2	----	60
----	----	----	----	----	16	16	9	6	----	46	1	1	3	61
----	----	----	----	----	26	26	----	----	34	----	2	1	2	60
----	----	----	----	4	84	86	----	----	2	----	----	2	----	86
----	----	----	----	----	32	32	----	----	28	----	----	2	2	60
----	----	----	r	----	56	56	----	----	----	----	----	1	----	60
----	----	----	r	----	95	95	----	----	----	----	----	1	----	95
----	----	----	r	----	24	24	----	----	27	----	----	2	----	60
----	----	----	r	----	21	28	9	9	15	6	----	1	----	60
----	----	----	r	----	8	18½	9	----	13	30	----	2	----	60
----	----	----	----	----	9	12	7½	----	----	45	----	2	----	62
----	----			To	tals	575	629	63	47	292	163	----	----	----	1164
----	----			Aver	age	32	34	3	2	16	9	----	----	----	64
		% of		Who	le	50%	53%								
3	----	----	r	----	39	22	----	----	39	----	----	1	----	60
----	----	----	r	----	21	27	----	----	21	----	----	2	----	60
----	----	----	----	----	25	25	----	----	20	15	----	1	----	60
----	----	----	----	----	15	15	----	----	----	45	----	2	----	60
----	----	----	----	----	24	23	7½	----	22	6	----	2	----	61
----	----	----	----	----	31	23	15	----	13	----	----	1	----	60
----	----	----	----	----	----	----	----	----	----	----	----	1	----	60
----	----	----	----	----	33	39	----	----	----	27	----	1	----	60
----	----	----	----	----	24	19	12	----	23	----	----	2	----	59
----	----	----	----	----	20	21	9	----	27	----	----	1	----	56
----	----	----	----	----	21	21	----	----	39	----	----	1	----	60
1	----	----	----	----	22	31	12	6	18	----	----	1	----	58
½	----	----	----	----	26	24	18	13	----	----	----	1	----	57
----	----			To	tals	301	306	73	19	222	93	----	----	----	771
----	----			Aver	age	23	23	6	1	17	7	----	----	----	59
		% of		Who	le	39%	39%								

nd averages for the group.

APPENDIX B

Prescribed and Elective Work as compiled from University and College Catalogues for 1909-10

	INSTITUTIONS	LANGUAGE OTHER THAN ENGLISH						ENGLISH LANGUAGE				MATHEMATICS						EXACT SCIENCES							SOCIAL SCIENCES										PHILOSOPHICAL SCIENCES				MISCELLANEOUS						1910	1905	ELECTIVES						
		Latin	Greek	French	German	Spanish	Total	Rhetoric	Composition	Literature	Total	Algebra	Geometry	Trigonometry	Analytical Geometry	Calculus	Total	Physics	Chemistry	Botany	Geology	Biology	Zoology	Totals	General History	Ancient History	Mod. History	Med. History	European History	American History	Political History	Total	Sociology	Economics	Total	Psychology	Ethics	Logic	Total	Bible	Elocution	Hygiene	Astronomy	Total	Physical Culture	Thesis	No. Prescribed Credits	No. Prescribed Credits	Major	Minor	Free Electives	Elective Requirements	No. Electives From Other Colleges	No. Degrees Given	No. Group Courses	Total Credits For Degree
	LARGE PRIVATE ENDOWED UNIVERSITIES																																																			
38	Chicago						6				3⅓						4																										r		3½	15			26⅔	30	2	3		60
39	Columbia										5																										1							17	25½			30	13	2	2		60
40	Cornell																																														10		50		1	2		60
41	Harvard																																																		60
42	Johns Hopkins						6	3	3		6						3						3														1½							24	27	9	6	21		2		60
43	Leland Stanford																																													20		40		1	1		60
44	North Western						3				2½						2																1											9	10½					2	2		60
45	Princeton	4					4		2		2						3																				3							16	30				44		3		60
46	Univer. of Pa						6				6						4						2														2							22	22	9	9		20	1	2		60
47	Yale						6			3	3																																	9	15	12	18	6	15	2	1		60
	Totals						34				27						16						5										1				7½					To	tals	100	146	51	33	243	112				
	% of Prescribed Work						34%				27%						16%						5%										1%				7½ %					Aver	age	10	14½	5	3	24	11				60
																																									% of	Whole	16⅔ %	20%								
	NEW ENGLAND COLLEGES																																																			
48	Amherst						6				3						3																											r		15	15			9	36		2		60
49	Bates	3		3			6				4						3																		2	⅓		2⅓						r		15	31	15	20	10		2		60
50	Boston University			4			4				2						3						2								2	2	2	1½	½		2					r		18	15	8	8	26		2	3		60
51	Boston College	14	12	2	2		30				10			4	4		8																				16	4	4					r		86	86						1		86
52	Bowdoin						3				5																																r		8	11	6	4	28		1	2		60
53	Brown						6				3						4						3								3							3							22	35			38			3		60
54	Clark						10				5												5																						20	20			40			2		54
55	Colby			3	3		6				3						4						3																						20	22			40			2		60
56	†Dartmouth						9		2½		2½	2					4																													16	16	9	6		46	1	1	3	61
57	†French	4		9			13	3			3						5		1		1		1	3											2			2							26	26			34		2	1	2	60
58	†Holy Cross	14	10				24				12		2	2	2	2	8	5	1		1		1	7											6	4	6	6	16						4	34	86			2			2		86
59	†Middlebury		6		3		9	4			4						4	3		3	1		⅔	7⅔				4							1	2	1	1	4							32	32			28			2	2	60
60	†Norwich	5			5		10	3		5	8						5	3	5	1		1		10								6	6		1	1	1	1	3					r		56	56						1		60
61	†St. Anselm	16	12				28				10						10	2	2					4										6	6				3	3	16				r		95	95						1		95
62	†Trinity	4		3			7		4		4						4	3	3					6														1½	1½	3					r		24	24			27			2		60
63	Tufts						9				3						3							6																				r		21	28	9	9	15	6		1		60
64	Wesleyan						6				2																																r		8	18½	9		13	30		2		60
65	Williams						3				2						4																													9	12	7½			45		2		62
	Totals						189				85						72							62										23			10								67					To	tals	575	629	63	47	292	163				1164
	% of Required Work						32%				14%						12%							10%										4%			2%								11%					Aver	age	32	34	3	2	16	9				64
																																										% of	Whole	50%	53%								
	WOMEN'S COLLEGES																																																			
66	Baltimore	5		4	4		13				5						3	3	3					6										3			2	2		4	2		3			r		39	22			39			1		60
67	Barnard						6				6						3							3															3					r		21	27			21			2		60
68	Bryn Mawr						5				10													5															5							25	25			20	15		1		60
69	Elmyra	3		4			7		1	2	3						4																							1						15	15			45			2		60
70	Mills						6				6						4½							6															2							24	23	7½		22	6		2		61
71	Mt. Holyoke	3		3			6				7½						3							6										3					3							31	23	16		13			1		60
72	Radcliff																																																			60
73	Randolph Mason	6					9				6						4							6										3					3	2						33	39			27			1		60
74	Rockford						4				3						4							8															3	1						24	19	12		23			2		59
75	Smith	3		3			6				2						3							3										2					2	2						20	21	9		27			1		56
76	Vassar						6				3						3							3										3												21	21			39			1		60
77	Wellesley						3				4																												3	4		1				22	31	12	6	18			1		58
78	Wells	3		3			6				5						3							3										3					3	2		½				26	24	18	13				1		57
	Totals						77				60						37							49										17					32					To	tals	301	306	73	19	222	93				771
	% of Required Work						25%				20%						12%							16%										5%					10%					Aver	age	23	23	6	1	17	7				69
																																									% of	Whole	39%	39%								

† Tabulations for numbers 56 to 62 inclusive are from 1905 catalogues. A number of catalogues for 1910 have come to hand since this MS. has gone to press, but changes are too slight to alter per cents and averages for the group.

Cl. Group.
Mod. Sang.
Social Science Group.
Science Group.
Educ. Ray Group

LIBRARY OF CONGRESS
0 019 748 006 3